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ABSTRACT

A research study had three objectives: to identify the core journals in the agricultural and extension education discipline, determine the importance of journals as a medium of scholarly communication in agricultural and extension education, and determine the subject matter areas published in the field's "core" journal, the "Journal of Agricultural Education" (JAE). A systematic sampling of 162 articles appearing in 19 issues of JAE during the even years of the decade of the 1980s was examined to accomplish the study objectives. Eleven journals accounting for 51% of the total citations in JAE were identified as core journals of the agricultural/extension education field. Because journals were cited in JAE more frequently than books, bulletins/reports, dissertations/theses, magazines, or papers/proceedings, they were considered to be the field's most important medium of scholarly communication. The following were the most frequently covered topics: secondary agricultural education (13.5%), youth/youth development (9.7%), experiential learning (9.7%), teaching methods (9.2%), issues related to agricultural instructors (9.2%), adult and postsecondary education (8%), learning theory) (6%), and program development/curriculum (5%). It was recommended that agricultural/extension educators broaden their scope to include other subject matter areas such as extension, international agriculture, special needs, elementary agricultural education, and critical thinking. (Contains 19 references.) (MN)

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A STUDY OF CORE JOURNALS USED BY AGRICULTURAL AND EXTENSION EDUCATORS

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INTRODUCTION

Journals are important channels for the dissemination of research information and are indispensable to educators who are active in research and development and/or teaching. According to Goldsmith (1984), journals provide an avenue for recognition for many researchers since a published journal article is the first formal presentation to the scientific community of an innovation or discovery.

In any discipline, a relatively few "core" journals are likely to contain a substantial number of articles on that discipline while the remaining articles are usually scattered in a large number of journals that are peripheral to the discipline. This pattern of concentration and dispersion of literature was observed and reported by Bradford (1934). A number of studies conducted since then have generated empirical evidence in support of Bradford's theory: marketing (Goldman, 1984); agriculture (Lawani, 1973); home economics (Goldsmith, 1983), environmental sciences (Subramanyan & O' Pecko, 1979); sociology (Broadus, 1952); and finance (Hamelman & Mazze, 1972).

The *Journal of Agricultural Education* (formerly the Journal of American Association of Teacher Educators in Agriculture) has been one of the primary outlets for publishing and disseminating research in the agricultural and extension education discipline. The articles appearing in the *JAE* reflect the focus and scope of the current scientific activity occurring in the discipline. The *JAE* also reflects research, philosophical and application orientation in the agricultural and extension education discipline.

The outlets for disseminating new knowledge in agricultural and extension education has increased over the years. The National Agricultural Education Research Meeting (NAERM) compiles refereed research papers that are presented annually at the conference in the form of proceedings. So far 20 volumes have been compiled. The four regions of the American Association for Agricultural Education also conduct meetings annually and brings out published proceedings. The Association for International and Agricultural Education (AIAEE), started in 1984, also conducts an annual meeting and brings out proceedings of referred papers presented at the meeting. In addition, the first issue of AIAEE's journal, The Journal of International Agricultural and Extension Education came out in Spring 94. As the outlets for disseminating agricultural and extension education research findings increased, the publishing of articles and presentation of refereed papers at meetings and conferences also increased. As a result, a substantial growth of literature in the agricultural and extension education discipline has occurred.

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The growth of literature in agricultural and extension education discipline has made it extremely difficult for educators to keep in touch with the latest research activities in their discipline as well as other closely related disciplines. Also, it has become difficult for library professionals to meet the informational needs of educators in various disciplines due to increase in the cost of subscription and shrinking library budget. Given the nature of responsibilities agricultural and extension educators have, it is important that we identify core journals important to the agricultural and extension education profession.

One of the most important bibliometric techniques used in identifying core journals in a discipline has been "citation analysis." According to Garfield (1979), citations are the formal explicit linkages between publications that have particular points in common. Also, citations are a means of acknowledging the intellectual debt (Kochen, 1983).

The use of frequency of citation for developing core lists of journals dates back to 1927 when Gross and Gross compiled a list of most frequently cited journals by examining the references in the Journal of American Chemical Society. Since then, core lists of journals have been developed in several fields. The use of citation frequency as an index of the significance of the cited document is based upon certain assumptions: 1) the journal selected as a source of citations is representative of the discipline (in this case, The Journal of Agricultural Education), 2) any well used, subjectively valuable journal in a given discipline may be chosen as a source of counting citations, 3) number of times a journal cited is directly proportional to its value or intrinsic worth, and 4) the subject content of the cited document is related to that of the citing document.

Moss (1986) analyzed the contents of the papers presented at the National Agricultural Education Research Meetings for the years 1974 to 1985. Findings from this analysis indicated that subject matter areas such as curriculum, teachers attitudes, problems and training were most frequently presented. Topics such as SOE, teaching methods, special populations and FFA were emerging topics in recent years. However, a majority of the topics were in the "other" category, not related to any specific topic.

Crunkilton (1988) examined the summaries of research and development activities in agricultural education and summary of research in extension for a period of six years (1981-82 to 1986-87). He categorized the summaries in the form of a matrix by program level, area of focus and scope. The findings indicated that 67% of the studies were in senior high program level, 41% were in the area of curriculum and development, and 54% of the studies were statewide in scope. He concluded that "the research in agricultural education is focused, but that focus has come about more by accident rather than thorough planned activities" (p.327). This paper attempts to develop a core list of journals used by agricultural and extension educators.

PURPOSE AND OBJECTIVES

The primary purpose of this study was to identify "core" journals in the agricultural and extension education discipline. Objectives of the study were to:

1. prepare a core list of journals used by agricultural and extension educators.
2. determine the importance of journals as a medium of scholarly communication.
3. determine subject matter areas published in the base "core" journal--*JAE*

PROCEDURES

A census of all articles published in the *JAE* during the decade of the eighties was considered for this study. Then using a systematic sampling procedure, every 2nd year in the decade was selected for analysis. This resulted in the selection of years: 1982, 1984, 1986, 1988 and 1990. A total of 19 issues and 162 articles were examined to accomplish the study objectives.

For categorizing citations, the classification of citations by Goldsmith (1983) was consulted. Goldsmith's classification included: books, journal articles, doctoral dissertations/master's theses, conference proceedings and paper presentations, magazines, and bulletins and reports. Goldsmith's classification of citations was slightly modified to reflect our study needs. For example, dissertation abstracts were included in the dissertation and master's theses category. Staff studies, summary research reports, and ERIC documentation abstracts were included in the bulletin/reports category. It was also determined how many citations were from the following types of publications: books, journal articles, doctoral dissertation and master's theses, paper presentations and conference proceedings, bulletins and reports. Frequencies, percentages and means were used to describe the data.

The subject matter areas published in the base journal (*JAE*) during the decade were determined using the classification made by Al Kahler (1991) of Iowa State University. Kahler's classification was selected because of its comprehensiveness which included 18 topics: 1) adult/post secondary, 2) elementary agricultural programs, 3) evaluation, 4) experiential learning, 5) extension, 6) inservice education, 7) international, 8) learning theory, 9) philosophy, 10) policy, 11) program development, 12) recruitment, 13) research methodology, 14) secondary agricultural programs, 15) special needs, 16) teaching methods, 17) youth/youth organization, and 18) others.

RESULTS

Objective 1

Table 1 shows a list of 11 journals, each of which received a total of at least 5 citations in the base journal (*JAE*) during the decade of the eighties. These 11 journals account for 193 (51%) of the total citations in the base journal. The remaining 184 (49%) of the citations are scattered in other journals, each of which were cited less than five times.

Objective 2

Data presented in Table 2 suggest that articles published in journals constitute the most important medium of scholarly communication indicating the importance of journals in subject collections. In the base journal chosen for the study (*JAE*) during the decade of the eighties, 377 or 26% of articles cited were from journals, followed by books (24%), bulletins/reports (23%), dissertation/theses (13%), magazines, (8%) and conference papers or proceedings (6%).

Table 1. Core List of Journals in the Base Journal (*JAE*) During (1982-90)

Journal Titles	YEAR 1982	1984	1986	1988	1990	Total	Percent
J. of Agricultural Education	3	13	13	22	34	85	22.5
Educational & Psychological Measurement	1	2	2	3	12	20	5.4
J. of Extension	3	-	2	8	6	19	5.3
J. of Teacher Education	-	1	3	3	8	15	3.9
J. of Applied Psychology	-	2	5	1	2	10	2.6
J. of Vocational Education Research	-	1	-	3	6	10	2.6
American Vocational Journal	-	1	4	-	3	8	2.1
NACTA Journal	1	2	-	1	3	7	1.8
Administrative Science Quarterly	-	4	3	-	-	7	1.8
Educational Researcher	-	-	1	2	3	6	1.6
Adult Education	-	4	-	2	-	6	1.6
Other Journals	10	11	36	42	85	184	48.8
Total	18	41	69	86	162	377	100.0

Objective 3

Secondary agricultural programs was the most frequent subject matter area published in the *JAE* (13.5%), followed by youth and youth development (9.7%), experiential learning (9.7%), teaching methods (9.2%), issues related to agricultural instructors (9.2%), adult and post secondary education (8%), learning theory (6%), and program development/curriculum (5%). Subject matter areas such as elementary agricultural programs and special needs were not represented in the *JAE* during the decade.

Table 2. Types of Documents used by Agricultural and Extension Educators (1982-90)

Document Type	YEAR 1982	1984	1986	1988	1990	Total	Percent
Journals	18	41	69	87	162	377	26.0
Books	13	57	94	73	119	356	24.0
Bulletins/Reports	28	57	59	79	112	335	22.9
Dissertation/Theses	23	39	33	38	54	187	13.0
Magazines	1	24	46	32	19	122	8.3
Papers/Proceedings	3	6	13	23	40	85	5.8

Table 3. Subject Matter Areas Published in the *JAE* During 1980-90

Subject Matter Area	YEAR 1982	1984	1986	1988	1990	Total	Percent
Secondary agricultural programs	3	3	7	4	5	22	13.5
Youth/youth organizations	2	6	3	3	2	16	9.9
Experiential learning	1	6	3	4	2	16	9.9
Teaching methods	1	2	2	5	5	15	9.3
Agricultural instructors	1	1	5	4	4	15	9.3
Adult/post secondary	3	1	4	-	5	13	8.0
Learning theory	-	2	1	3	4	10	6.2
Program development/ curriculum	1	3	3	-	1	8	5.0
Extension	-	1	1	3	2	7	4.3
Inservice education	-	2	1	2	1	6	3.8
International	-	-	1	1	3	5	3.1
Research methodology	-	-	1	-	3	4	2.5
Evaluation	1	-	-	-	2	3	1.8
Philosophy	1	1	1	-	-	3	1.8
Recruitment	1	-	-	-	2	3	1.8
Policy	-	-	2	-	-	2	1.2
Elementary agricultural programs	-	-	-	-	-	-	-
Special needs	-	-	-	-	-	-	-
Others*	4	5	-	1	4	14	8.6
Total	19	33	35	30	45	162	100.0

* includes subject matter areas such as leadership, teacher education and graduate students

CONCLUSIONS AND/OR RECOMMENDATIONS

The following conclusions and recommendations are made based on the study findings.

The concentration of agricultural and extension education literature in few core journals, in general, mirrors similar patterns prevalent in other disciplines. However, the percent of references cited from journals is much higher in other disciplines. This is partly because, in the past, agricultural and extension educators tended to rely more on reports/bulletins/ monographs for citing information.

Journals, books and bulletins/reports may be considered as important documents consulted by agricultural and extension educators. These three documents together account for 73% of the total documents cited in the base journal. This pattern of dispersion of agricultural and extension literature used by agricultural and extension educators suggests a hierarchy of priorities that may be used for resource allocation in developing a core collection in our libraries.

The number of times a journal article is cited has increased over the years indicating breadth in reading habits of agricultural and extension educators. Radhakrishna, Jackson, Eaton & Conroy (1994) found that a typical article in the *JAE* contained 11 citations in 1990 compared to 4.5 in 1982. However, Bowen (1994), indicated that agricultural and extension educators cite far fewer articles than researchers who publish in major education and communications journals. Further, Bowen suggests that agricultural and extension educators should synthesize all related research to know more about potential research problems. This synthesis may require citing no fewer than 40 references for a typical journal article. Such syntheses help agricultural and extension educators acquire depth and build a strong conceptual/theoretical framework.

Agricultural and extension educators tend to publish topics in only six of the 18 areas classified by Kahler. Secondary agricultural programs, youth/youth organizations, experiential learning, and teaching methods were the top four areas frequently published in the *JAE*. This suggests that agricultural and extension educators should broaden their scope to include other subject matter areas such as extension, international agriculture, special needs, elementary tary agricultural education and critical thinking. According to Bowen, Radhakrishna & Jackson (1991), agricultural and extension education faculty have been distributing more of their time to activities such as extension education, international agriculture, and communications which have not been traditionally included in *JAE*. Moss (1986) found that of the 207 papers presented at 1974-1985 NAERM, the top category was "others," that is a mixture of studies unrelated to specific topics. Perhaps the *JAE*'s Editing-Managing and Editorial Review Boards can assist with broadening the scope of topics to be included in the *JAE* by offering specific themes related to key subject matter areas.

Finally, agricultural educators and the *Journal of Agricultural Education* Editorial and Review Board should recognize the non-traditional areas of agricultural and extension education pursued by agricultural and extension faculty. If we are to face the challenges of the future, our profession's premier journals should reflect faculty's research

and scholarly work. Further, as suggested by Bowen (1994), the profession should examine and cite more research conducted in other disciplines and incorporate those findings, conclusions and recommendations in order to build a stronger framework and continue broadening our focus and breadth of knowledge.

It is recommended that findings of this study be shared with faculty, department heads, and graduate students in agricultural and extension education and library officials for making informed decisions about journal subscription and submission of articles to journals.

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